US009273926B2

(12) **United States Patent**
Wood et al.

(10) **Patent No.: US 9,273,926 B2**
(45) **Date of Patent: Mar. 1, 2016**

(54) **CONVERSION KIT WITH A RAIL SYSTEM FOR A PAINTBALL MARKER**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **13/775,414**

(22) Filed: **Feb. 25, 2013**

(65) **Prior Publication Data**

US 2013/0220295 A1 Aug. 29, 2013

Related U.S. Application Data

(60) Provisional application No. 61/603,830, filed on Feb. 27, 2012.

(51) **Int. Cl.**

F41B 11/00	(2013.01)
F41B 11/89	(2013.01)
F41C 23/12	(2006.01)
F41B 11/70	(2013.01)
F41G 11/00	(2006.01)
F41A 3/66	(2006.01)

(Continued)

(52) **U.S. Cl.**

CPC . ***F41B 11/70*** (2013.01); ***F41A 3/66*** (2013.01); ***F41B 11/00*** (2013.01); ***F41B 11/62*** (2013.01); ***F41B 11/89*** (2013.01); ***F41C 23/12*** (2013.01); ***F41C 23/16*** (2013.01); ***F41C 23/20*** (2013.01); ***F41G 11/003*** (2013.01)

(58) **Field of Classification Search**

CPC F41B 11/00; F41B 11/60; F41B 11/62; F41B 11/70; F41B 11/89; F42B 6/00; F41C 23/12; F41C 23/16; F41C 23/20; F41G 11/003; F41G 11/004; F41A 3/66

USPC 124/1, 80, 84, 73

See application file for complete search history.

(56) **References Cited**

U.S. PATENT DOCUMENTS

3,512,290 A * 5/1970 La Violette, Jr. et al. 42/75.01
3,611,607 A * 10/1971 Donnell 42/106

(Continued)

FOREIGN PATENT DOCUMENTS

CA	2631979 A1	11/2009
DE	102004014734 B3	9/2005
EP	2314976 A2	4/2011

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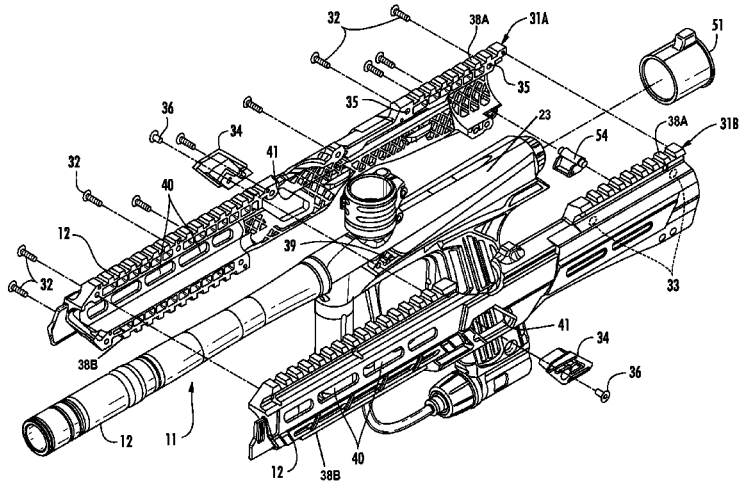
(57) **ABSTRACT**

A convertible projectile launching device includes a projectile launching device, such as a paint ball marker, a less than lethal launcher or an airsoft gun, to which a user can secure at least one shell that changes the outer configuration or appearance of a projectile launching device on which it is secured into a MILSIM style projectile launching device. Any type of fasteners may be used to secure the shells to the device. The surface of at least one shell provides a rail system for mounting objects to the projectile launching device. The shell has a mating surface that engages a corresponding mating surface on the projectile launching device in order to increase stability of the shell. A blanking plug or a butt stock can be inserted into the rear of the shell, secured by a latch or other mechanism on at least one shell.

43 Claims, 11 Drawing Sheets



(51) **Int. Cl.**

F41C 23/16	(2006.01)
F41C 23/20	(2006.01)
F41B 11/62	(2013.01)

(56) **References Cited**

U.S. PATENT DOCUMENTS

3,685,194	A *	8/1972	Coon	42/77
3,798,819	A *	3/1974	Hillberg	42/72
4,601,123	A *	7/1986	Swearengen et al.	42/72
5,555,661	A *	9/1996	Yap	42/49.02
6,655,069	B2 *	12/2003	Kim	42/114
8,205,373	B1 *	6/2012	Ubl et al.	42/71.01
8,713,838	B2 *	5/2014	Ubl et al.	42/71.01
2005/0241211	A1 *	11/2005	Swan	42/124
2008/0168973	A1 *	7/2008	Levin et al.	124/73
2009/0282718	A1 *	11/2009	Bartley	42/75.03
2011/0283582	A1	11/2011	Hunter et al.	
2012/0042557	A1 *	2/2012	Gomez et al.	42/90

* cited by examiner

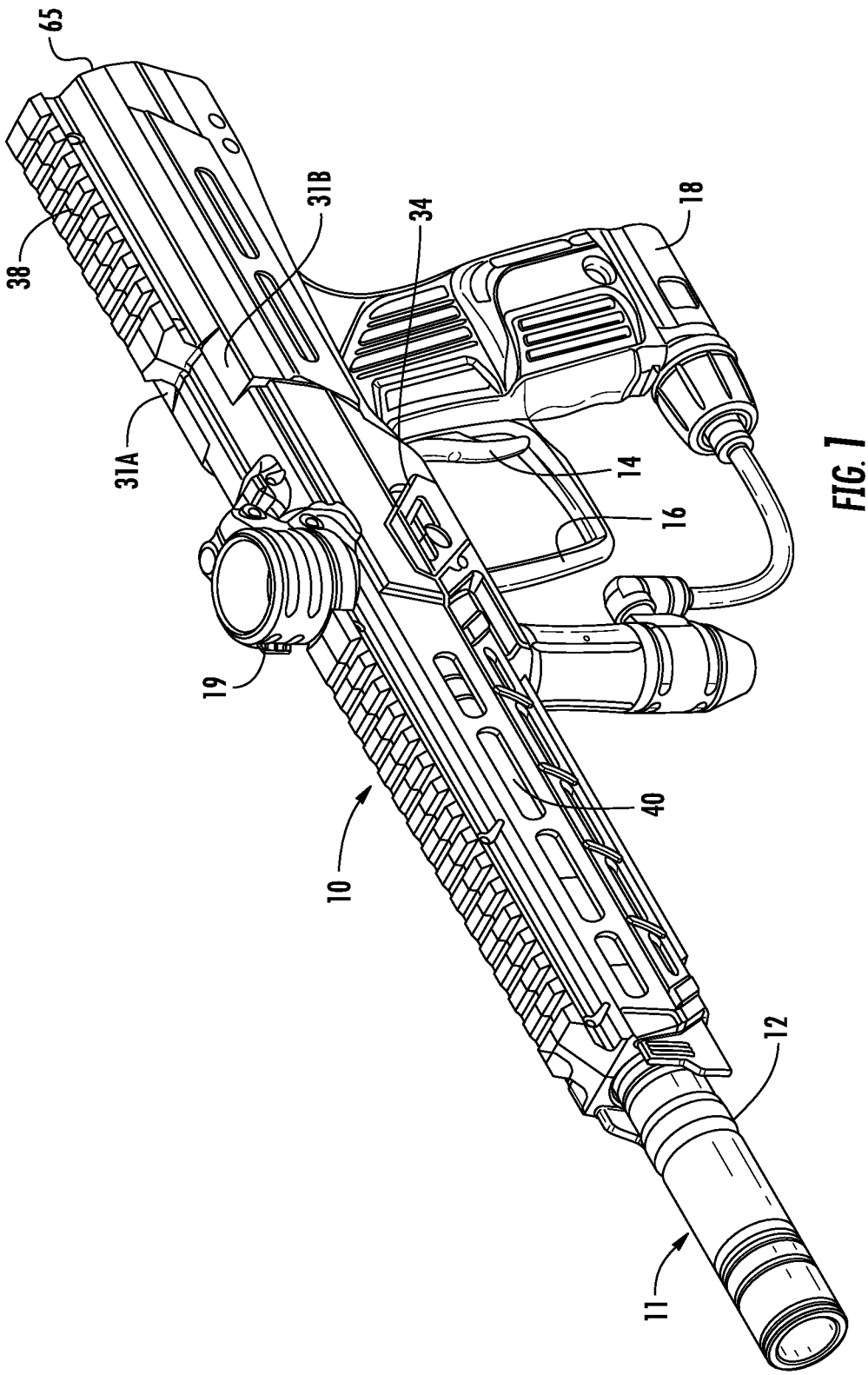


FIG. 1

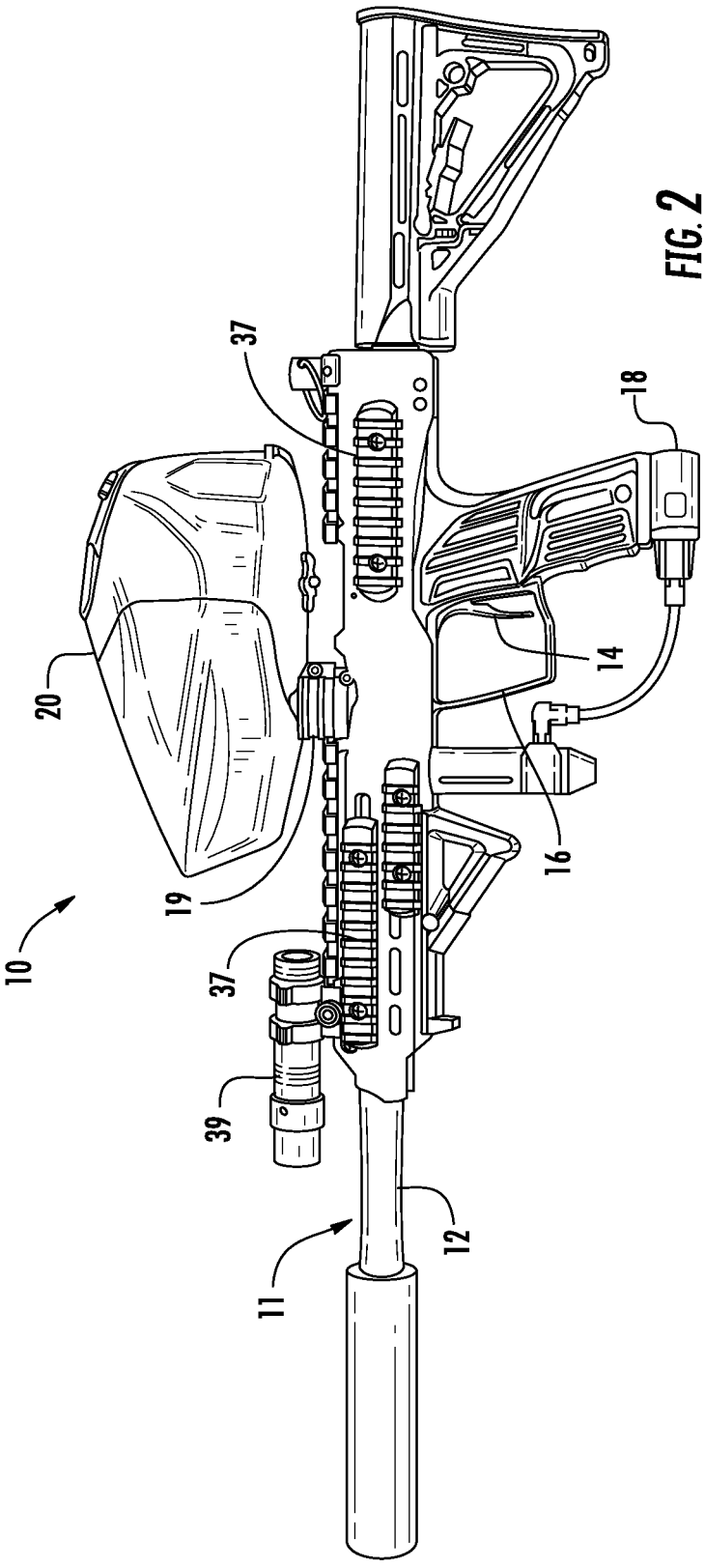


FIG. 2

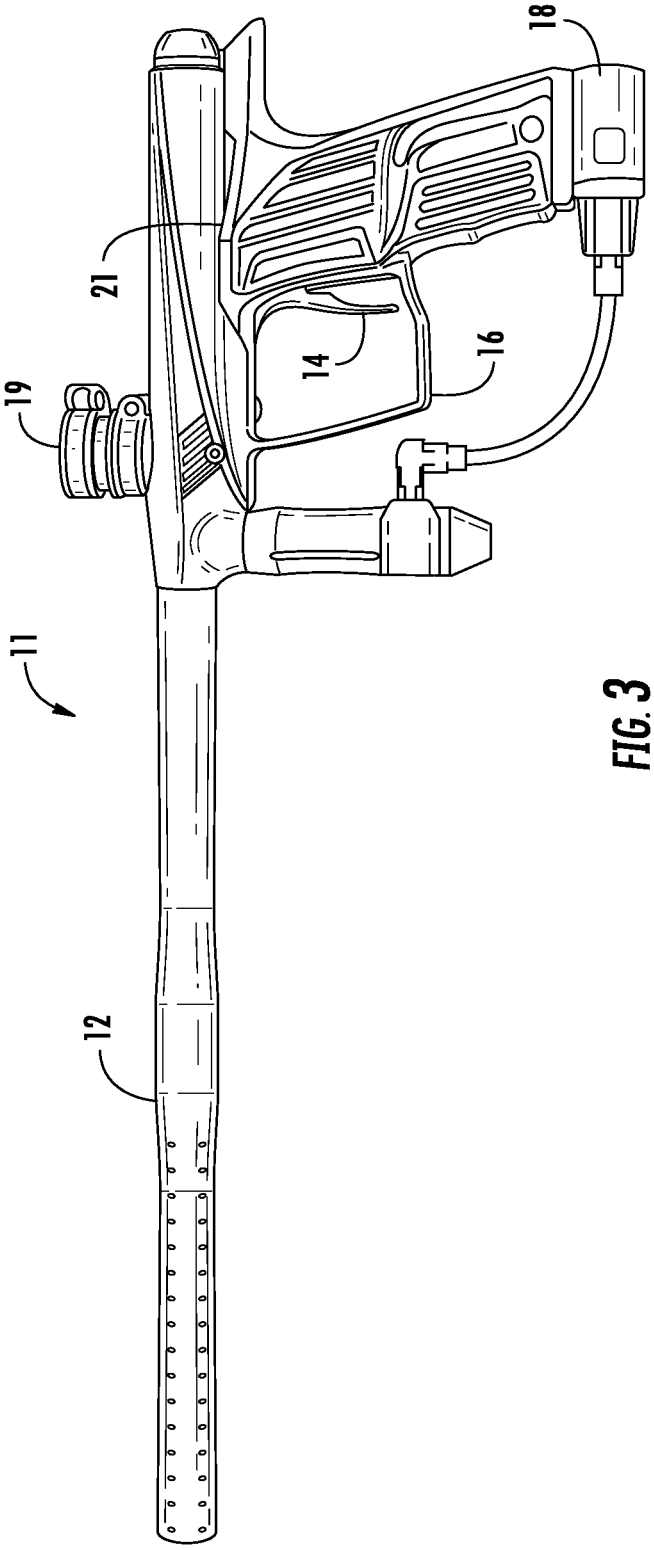
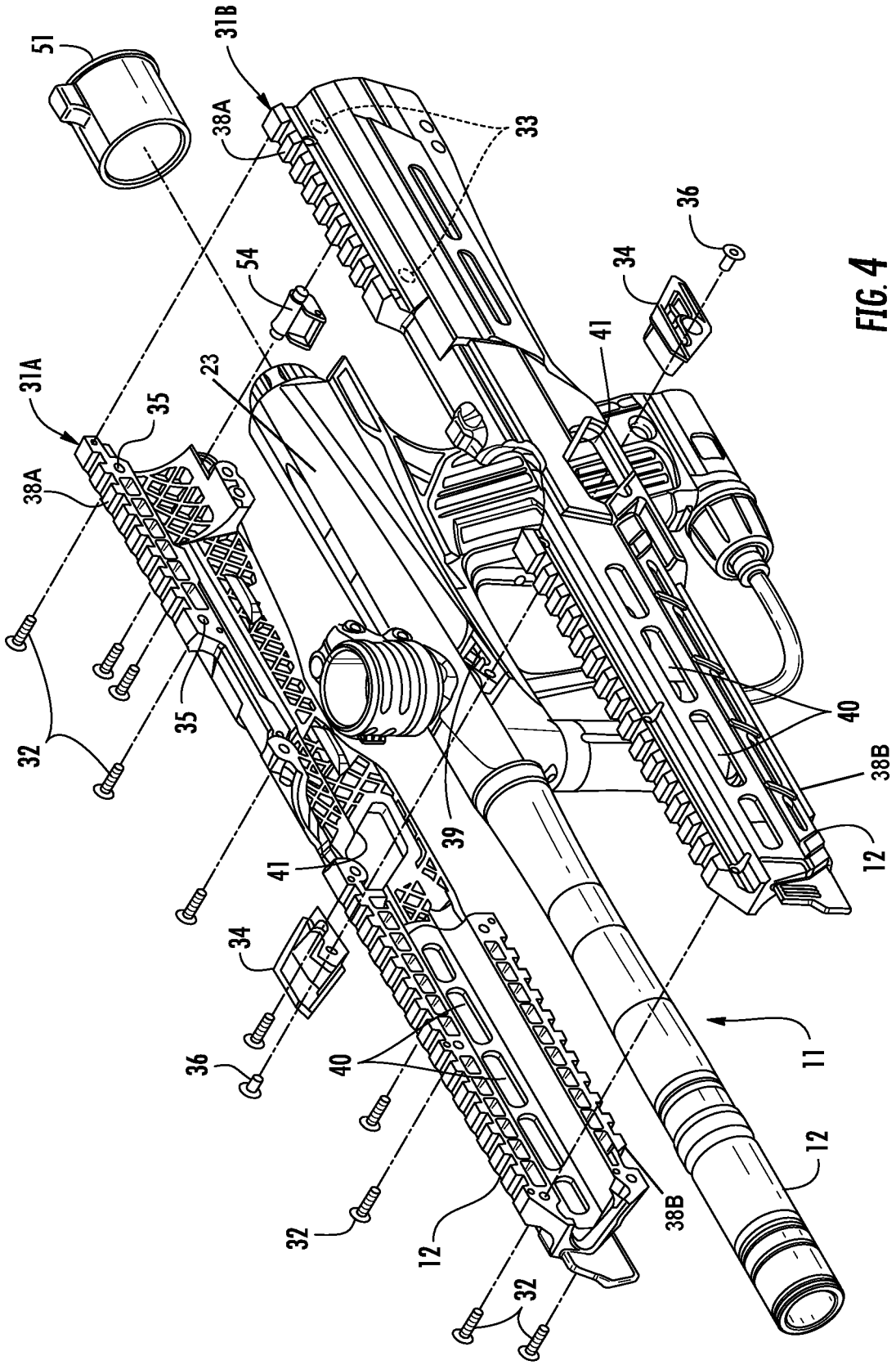


FIG. 3


51
31B
38A
33
36
34
54
41
31A
35
23
38A
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38B
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12
41
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36
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11
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38B
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32

FIG. 4

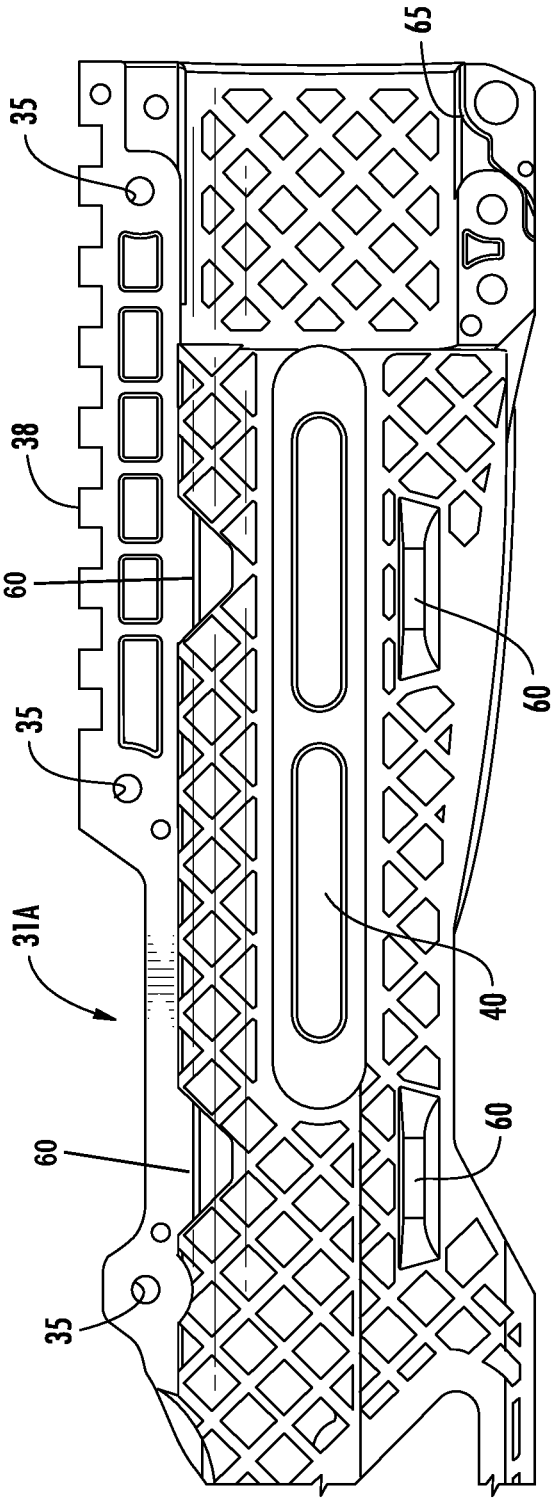

FIG. 5

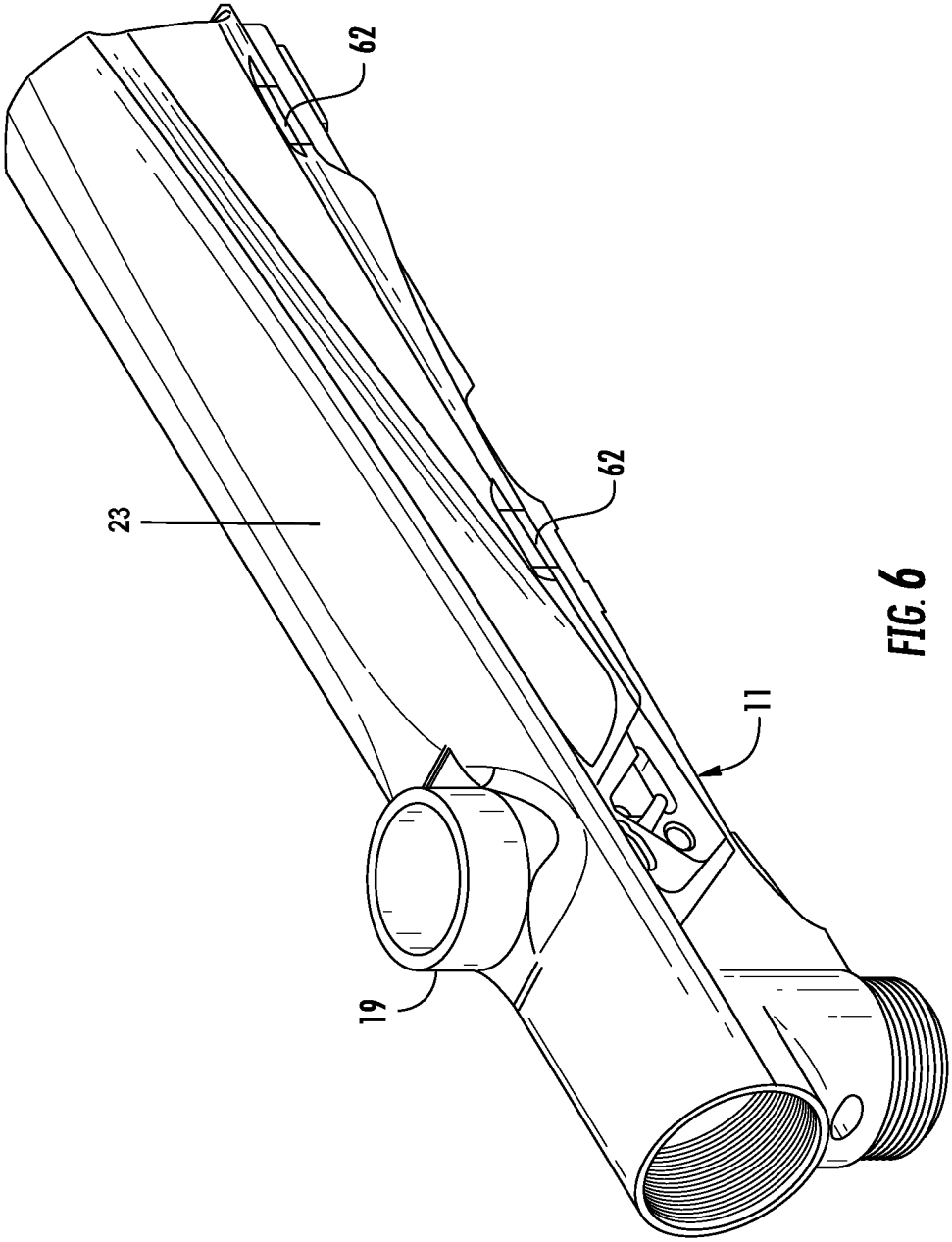

FIG. 6

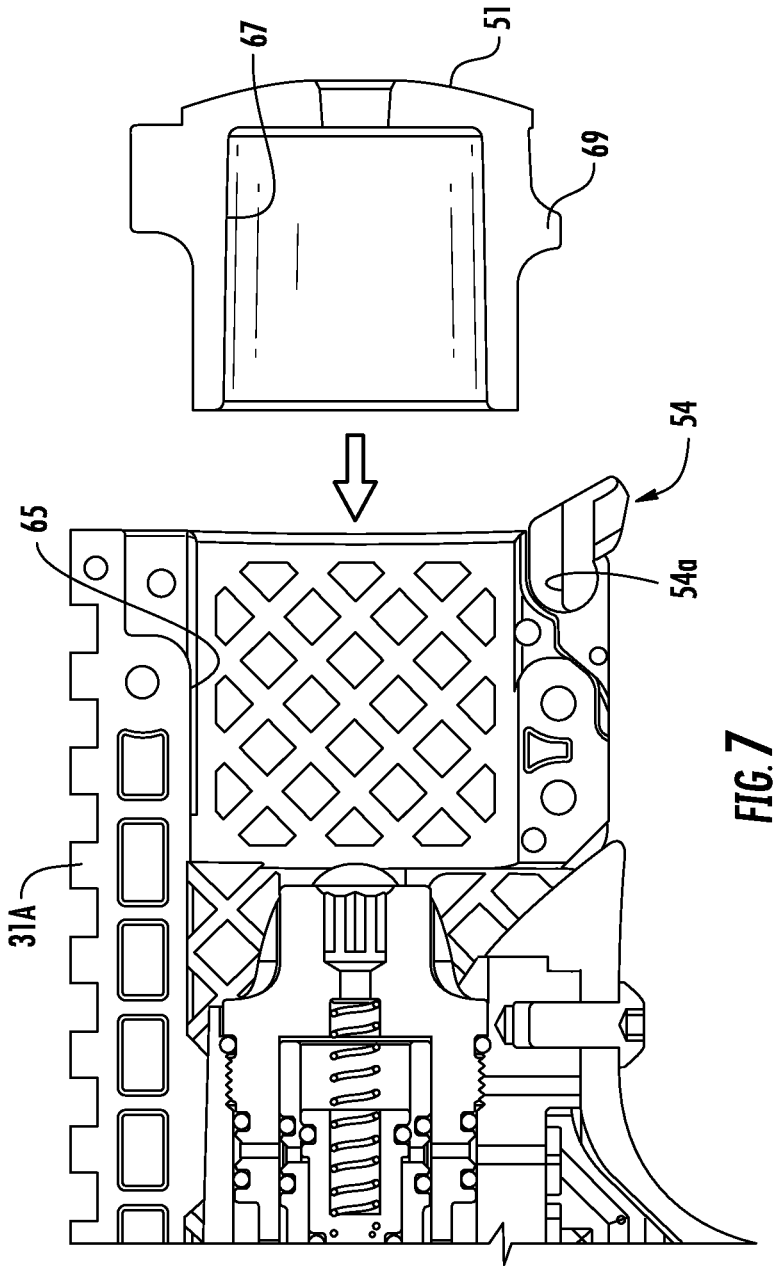

FIG. 7

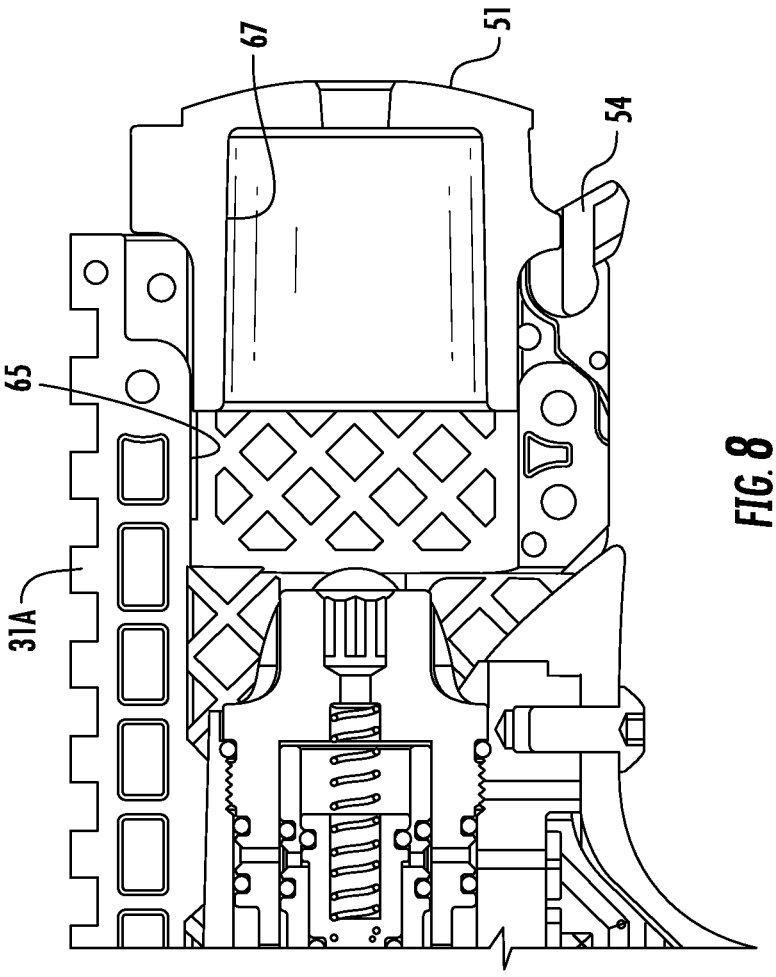

FIG. 8

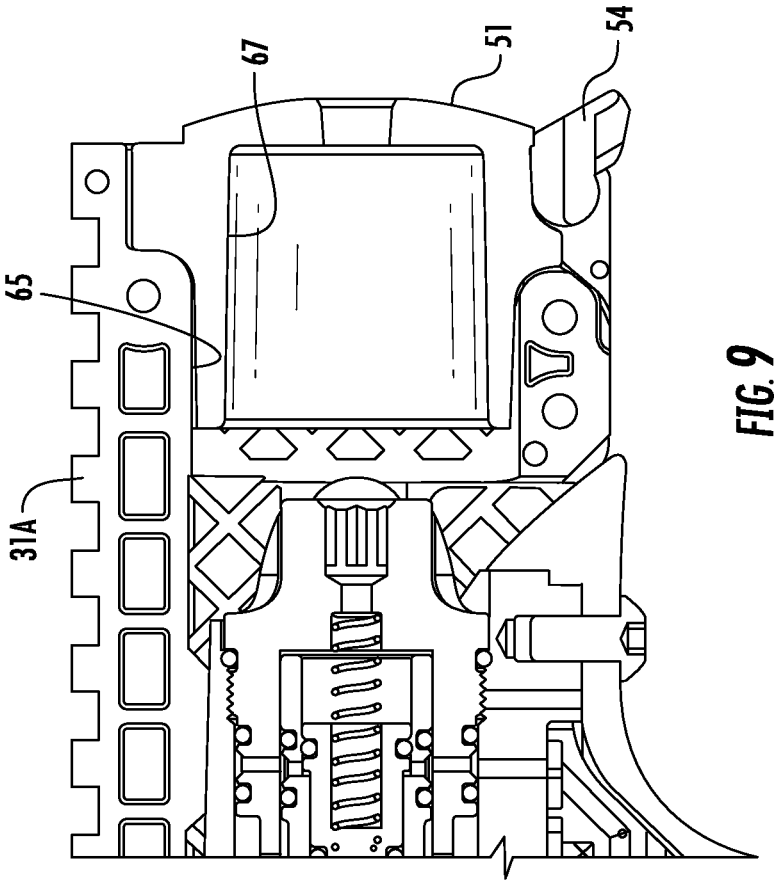

FIG. 9

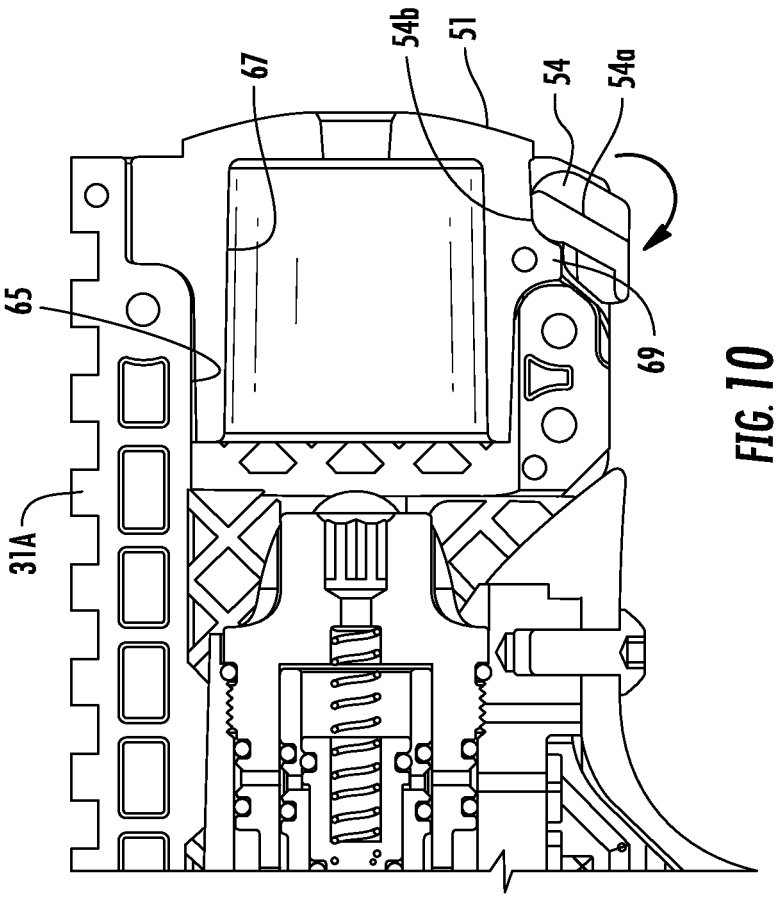

FIG. 10

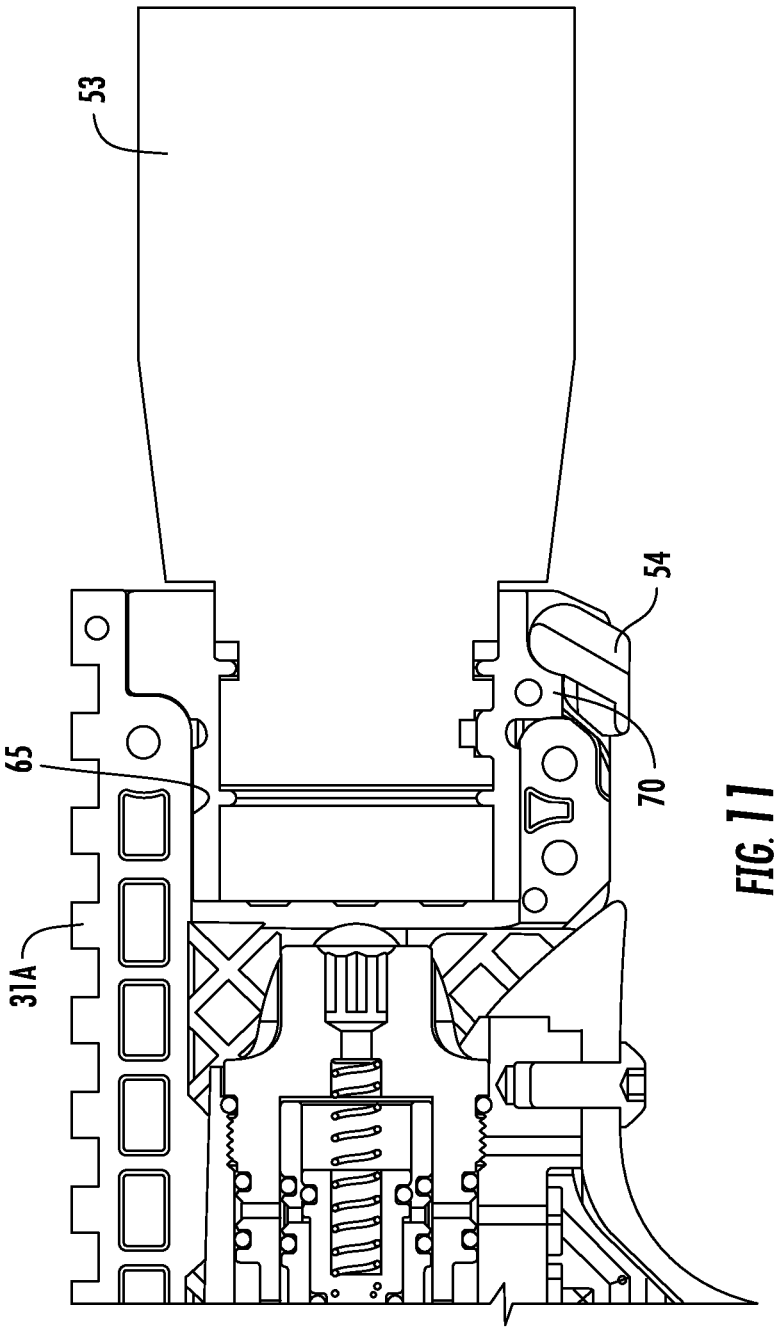

FIG. 11

CONVERSION KIT WITH A RAIL SYSTEM FOR A PAINTBALL MARKER

CROSS REFERENCE TO RELATED APPLICATION

This application is related to and claims priority from earlier filed provisional patent application Ser. No. 61/603,830, filed Feb. 27, 2012, the entire contents thereof is incorporated herein by reference.

BACKGROUND OF THE INVENTION

The invention relates generally to paintball markers and air soft guns and the gameplay related thereto. The sport of paintball is very well known and includes the use of a paintball marker or gun to pneumatically launch a rubber ball or a ball that is typically filled with a colored liquid. For air soft, plastic projectiles are shot at opposing players or targets. Each of the players in the game has such a marker or gun so they can launch projectiles toward players on the opposing team. When players on the opposing team are marked or hit with a projectile, there is typically a scoring event.

The present invention is particularly related to the game of paintball and the related paintball markers. Therefore, the invention will be discussed in detail in connection with paintball markers for ease of illustration but it should be understood that the present invention is applicable to the air soft sport and air soft guns as well.

Also, the present invention relates to any type of projectile launching device or any device that is or simulates a projectile launching device, such as a laser tag simulated firearm. The present invention has applicability for use in security and police forces as well as "less than lethal" and "non-lethal" firearms. For ease of discussion herein, the present invention is discussed in detail in connection with paintball markers but is should be understood that the present invention can be used in connection with any type of firearm, projectile launcher and simulated versions thereof.

It is known, in the sport of paintball, that there are many different types of game play. For example, "supair or speedball": events are very close range games, played on a small field, using inflatable bunkers or similar small barricades. Typically they last a few minutes and the turnaround between games is limited to a few minutes or seconds. Such speedball games can even be played indoors. In speedball events it is preferable to have a small low profile paintball marker that is hard for a player's opponent to see and shoot at, but is quick and easy to clean the paint from between games if the player is shot during the game. Thus, for this type of game, the basic or core paintball marker is all that is needed.

On the other hand, another popular type of paintball gameplay is called a "scenario or MILSIM (military simulation)" game. Such a scenario game is played on a much larger mixed terrain field, possibly woodland or urban environment, the idea of the game is to mimic some sort of "war type scenario." Typically these games are played over a much longer period of time, normally hours or days. In scenario games many people find it preferable to have a paintball marker that you can attach various third party devices or tactical aids to, such as a fore grip, magazine, sling mounts, light sources/torches, optical sights, laser sights, cameras etc. In other words, in these types of scenario types games, it is desirable for the paintball marker to look and have the ability to accessorize more like a real firearm, such as an M16 or M4, therefore creating a MILSIM (military simulation) marker or airsoft gun.

There is a need in the prior art to enable a paintball marker (or air soft gun) to be easily and quickly converted over from its basic speedball form to a scenario or MILSIM form that includes some type of rail arrangement/system so it can more closely simulate a real firearm. As is well known, accessories, such as a light sources and scopes, are commonly mounted onto rail systems.

There have been attempts in the prior art to provide rail systems on guns and replacement mounting systems that can be interchanged on these guns. However, these devices and systems are inadequate because they do not closely simulate a real weapon or firearm because they do not completely enshroud the marker or gun. Without full or substantially full enshroudment of the underlying projectile launching device, attachment of accessories simulating a real weapon or firearm is not possible.

These prior art systems are also inadequate because they do not completely detach to leave a marker that is totally free from any rail mountings. There are shrouds or mounting systems available, but they typically attach to the barrel or to the existing rail mount.

There is a need to provide a rail kit for a paintball marker or an air soft gun that can also simultaneously easily convert the marker from a normal non-MILSIM setup to a modified scenario MILSIM set up that more closely simulates a real firearm. There is a need to provide a rail kit for a paintball marker or an air soft gun that is easy to install, remove and clean, and allows easy access to the eyes or ball detectors, without the need to remove the rail kit. There is a need to provide a rail kit for a paintball marker or airsoft gun that allows easy access to the internals of the paintball marker, without the need to remove the complete rail kit, by providing an easily removable rear cap or opening to allow removal of the internal firing mechanism for easy maintenance. There is a need to provide a rail kit for a paintball marker or airsoft gun that allows easy fitment of a stock via a quick release mechanism that may be operated with a lever latch mechanism, screw fit, bayonet fit or other mechanism. There is also a need to provide a rail kit for a paintball marker or airsoft gun that has rail mounts or the ability to mount accessory rails, such as Weaver, Picatinny or NATO rails built into the rail kit. There is a need to provide a rail kit for a paintball marker or airsoft gun that does not clamp onto, nor interfere with the barrel of the paintball marker or airsoft gun. Finally, there is a need to provide a rail kit that can receive a wide range of accessories thereon like a rail system of a real firearm.

SUMMARY OF THE INVENTION

The present invention preserves the advantages of prior art paintball markers and airsoft guns accessories added thereto. In addition, it provides new advantages not found in currently available markers, guns and accessories and overcomes many disadvantages of such currently available markers, guns and accessories.

The invention is generally directed to the novel and unique rail kit that is attached to a paintball marker, air soft gun or any other type of projectile launching device or simulated device thereof. The rail kit can quickly and easily convert a standard paintball marker or air soft gun from a conventional speedball non-MILSIM setup to a scenario or MILSIM setup that simulates the look and mounting flexibility of a real firearm. The purpose of the rail kit of the present invention is to allow the user to play 'speedball type games' and "scenario type games" with the same paintball marker by simply adding or removing the rail kit system.

It is therefore an object of the present invention to provide a rail kit for a paintball marker or an air soft gun that can easily convert it from a normal non-MILSIM setup to a modified scenario MILSIM set up that more closely simulates a real firearm.

Another object of the present invention is to provide a rail kit for a paintball marker or an air soft gun that is easy to install, remove and clean.

Another object of the present invention is to provide a rail kit for a paintball marker or airsoft gun that allows easy access to the eyes or ball detectors, without the need to remove the rail kit, by providing easily removable eye cover plates.

Another object of the present invention is to provide a rail kit for a paintball marker or airsoft gun that allows easy access to the internals of the paintball marker, without the need to remove the complete rail kit, by providing an easily removable rear cap or opening to allow removal of the internal firing mechanism, such as for easy maintenance or any other purpose.

Another object of the present invention is to provide a rail kit for a paintball marker or airsoft gun, projectile launcher or simulation thereof that allows easy fitment of a stock via a quick release mechanism that may be operated with a lever latch mechanism or any other type of mechanism.

Another object of the present invention is to provide a rail kit for a paintball marker or airsoft gun that has rail mounts such as Weaver, Picatinny or NATO rails built into the rail kit.

Another object of the present invention is to provide a rail kit for a paintball marker, airsoft gun, projectile launcher or simulation thereof that has the ability to mount accessory rails such as Weaver, Picatinny, NATO rails, dovetail rail or other rail system onto the rail kit.

Another object of the present invention is to provide a rail kit for a paintball marker or airsoft gun that does not clamp onto, nor interfere with the barrel of the paintball marker or airsoft gun. Therefore allowing the barrel to be removed without the need to remove the complete rail kit. For example, optionally, the regulator, frame, feed neck can be removed where the rail kit does not interfere of clamp onto these components.

A further object of the present invention is to provide a rail kit that can receive a wide range of accessories thereon like a rail system of a real firearm.

BRIEF DESCRIPTION OF THE DRAWINGS

The novel features which are characteristic of the present invention are set forth in the appended claims. However, the invention's preferred embodiments, together with further objects and attendant advantages, will be best understood by reference to the following detailed description taken in connection with the accompanying drawings in which:

FIG. **1** is a perspective view of the rail kit of the present invention installed on a standard paintball marker;

FIG. **2** is a side elevational view of a marker equipped with the rail kit of the present invention with some accessories installed on the rail system;

FIG. **3** is a standard type paintball marker, without the rail kit of the present invention installed, that could be used in speedball non-MILSIM type paintball games;

FIG. **4** is an exploded perspective view of the paintball marker of FIG. **3** with the rail kit of the present invention shown enshrouded thereabout in exploded fashion along with a blanking plug, which is retained in place by a lever latch lock system;

FIG. **5** is one of the half-shells of the rail kit of the present invention showing contact points;

FIG. **6** is a shows contact points between an underlying paintball marker and the shell (as in FIG. **5**), when fully assembled, such as shown in FIG. **1**;

FIGS. **7-10** show the process of installing a blanking plug in the rear of the rail kit of the present invention as retained by a lever lock latching system, one of the shells being removed for illustration purposes; and

FIG. **11** shows a butt stock, as in FIG. **2**, installed in place and retained by the lever lock latching system, one of the shells being removed for illustration purposes.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

The add-on mounting rail kit **10** is designed to be simple to add or remove from a paintball marker **11**, thus enabling the player to enjoy all types of paintball games with the same paintball marker **11**. This negates the need for the player to have to buy two guns to play all types of the game, saving the player a great deal of money.

The construction of the rail kit **10** of the present invention can be seen best in connection with FIGS. **1**, **2** and **4**. The uniqueness of the present invention is directed to the rail kit **10** providing a substantially full shroud about the underlying marker **11** (such as seen in FIG. **3**) to convert it's exterior configuration to a scenario MILSIM type marker, as seen in FIGS. **1** and **2**.

An example of an underlying marker **11** is shown in FIG. **3**. The marker **11** has a barrel end **12** and a handgrip end **16**. The handgrip end **16** has a trigger **14** and a gas tube receiver **18** for receiving compressed gas from a tank (not shown) to operate the paintball marker **11**. The marker **11** also has notches **21** on the outer surface of the marker **11** and contact points **23** on the upper surface of the marker **11**. These notches **21** and contact points **23** help secure mounting of the conversion kit **10** of the present invention. On the upper surface of the marker **11** is a paintball receiver **19** capable of engaging a paintball hopper **20**, as seen in FIG. **2**. Other hoppers, magazines and paintball feeding mechanisms could be mounted on or under the conversion kit **10** in order to provide paintballs to the marker, in accordance with the present invention.

FIG. **1** shows the conversion kit **10** of the present invention enshrouding or covering the underlying marker **11** while still allowing the user to access and inspect features, parts and components of the marker **11**, such as the trigger **14**, the gas tube receiver **18**, the paintball receiver **19**, and the barrel **12** without removing the conversion kit **10** from the marker. Thus, even when the conversion kit **10** is installed on the marker **11**, the operation of the underlying marker **11** remains unaffected and the marker **11** operates in a normal fashion.

The conversion kit **10**, shown in FIG. **1**, preferably has two shells **31**A, **31**B that are secured on the marker **11**. While two shells are preferred, it is envisioned that the conversion kit **10** may include more than two shells, such as where multiple shells are secured about each side of the marker **11**. These variations in the configuration of the shells are considered to be within the scope of the present invention.

Referring to FIG. **4**, for example, the shells have apertures **40** through the sides of the shells **31**A, **31**B and a rail system **38**A formed on the upper surfaces of the shells and rail system **38**B on the lower surface of the shells **31**A and **31**B. It should be noted that the tops of the shells **31**A and **31**B are show to respectively provide a partial rail system. When the shells **31**A and **31**B are mated together, as in FIG. **1**, they form, together, a full rail system of a desirable width. It is also possible that the rail system is provided on only one of the shells. It is also possible that the rail system is provided on any

surface of the shells. Further apertures **41** are also preferably provided to receive eye covers **34**, which are secured by fasteners **36**. This enables access to important components on the marker **11**.

FIG. **2** also shows that additional side rails **37** may be mounted on the apertures of the conversion kit. These features both give the marker an appearance that is more similar to a real firearm. Furthermore, the rail system **38** and side rails **37** each allow the user to mount objects to the marker with the conversion kit **10**. For example, FIG. **2** shows a light **39** that is mounted to the rail system **38** of the conversion kit **10**. A user could also mount other objects, such as a laser sight, an optical sight, a scope, a magazine or other firearm accessories. Although the rail system, collectively **37** and **38**, shown in the figures resembles a common rail system design, other rail systems are also possible. Also, although the figures show a rail system **38** on the upper surfaces of the shells and side rails **37**, in other embodiments, the rail system may be provided on a lower, or any surface of the shells, such that objects could be mounted directly below or on any surface of the shells **31**A, **31**B.

FIG. **4** shows the shells **31**A, **31**B have removable eye cover plates **34** that allow easy access to ball detectors **39**, without the need to remove the rail kit **10**. As shown in FIG. **1**, the eye cover plates **34** are removably fastened to the shells **31**A, **31**B using cover plate fasteners **36**. In FIG. **1**, these cover plate fasteners **36** are shown as threaded fasteners, but a person of ordinary skill in the art could use other fastening methods.

FIGS. **4-6** show how the shells **31**A, **31**B (preferably two half shells) are secured onto and about the body of the marker **11**. It is envisioned that the two half shells **31**A, **31**B can be retained together by any means possible. For example, it is possible to retain the shells together by a fastener, such as a screw **32** and retained nut arrangement. FIG. **4** shows male threaded screws **32** routed through pass through holes **35** on one shell **31**A and into female threaded holes **33** on the other shell **31**. Other possible ways to retain the shells together could be cable ties, clips, ratchets and any other structure envisioned including any of those envisioned by a person of ordinary skill in the art.

FIGS. **4-6** show the contact points between an underlying paintball marker **11** and the shells **31**A and **31**B, particularly as in FIG. **5** when fully assembled. The contact points are between the protrusions **60** on the shells, as in FIG. **5**, and seats (or surfaces) **62**, as in FIG. **6**, on the marker **11** itself. The communication between the contact points **60** into and onto seats (or surfaces) **62** help key and align a given shell, **31**A, **31**B to the marker **11**. It should be understood that the communication and keying of the shells **31**A, **31**B to the marker **11** is just one example. The communication can be reversed where the protrusions are on the marker **11** and the recessed seats are on the shells **31**A, **31**B. Any other complementary contact surface mate between a marker **11** and the shells **31**A, **31**B can be employed and still be within the scope of the present invention.

These contact points are an integral part of the attachment method around the body giving the clamping sections stability when the mating pads or protrusions **60** on the inner surface of the shell **31**A, **31**B, as in FIG. **5**, are inserted into or onto the notches or seats (or surfaces) **62** and put under tension. This tension is caused by the pads or protrusions (that can be solid or made from a soft foam or rubber material) **60** that push on the upper section of the marker body (FIG. **5**). Although these figures show one arrangement of protrusions and notches, there is scope for many contact points or indeed for the whole surface to be a contact point, a wide variety of arrangements are possible and are considered to be covered by this invention.

Although the conversion kit **10** is shown as including two shells in the figures, the conversion kit could also be formed of a single shell. For example, a shell could be formed as a single piece that is capable of being placed around a marker. A flexible portion or a hinged portion on the single shell would allow a single shell to completely enshroud the marker **11**. Another example of a single shell would be a shell that provides an upper shroud for a marker and has an aperture in the lower surface of the shell for receiving a marker. Single shell embodiments such as these would allow the user to more quickly convert the marker to a MILSIM type marker, and also provide a conversion kit that more closely simulates a real firearm.

When the two shells **31**A, **31**B are mated together and enshrouding the marker **11**, they leave a rear open end **65**. This open end **65** can be either closed up or have an accessory mounted therein. A unique lever latch system, employing a locking latch lever **54** preferably pivotally mounted to one or both of the shells **31**A, **31**B, as seen in FIGS. **7-11**, is integral to the rear open end of the conversion kit **10**. More specifically, a blanking plug **51** (FIGS. **7-10**) is receivable into the rear open end **65**. In FIG. **7**, where shell **31**B is not shown for illustration purposes, it can be seen that open end **65** is rearwardly facing. Plug **51** is configured to be complementary in shape to the open end. The plug **51** is directed into the rear open end **65**, as shown by the arrow. During which time, lever **54** is set in an open position, as seen in FIG. **7**. This permits the plug **51** to be easily routed into the rear open end **65**. More specifically, tab **69** of plug **51** can easily pass over notch **54***a* of lever **54**. In FIG. **8**, the plug **51** is shown partially installed into the rear open end **65** with FIG. **9** showing the plug **51** fully installed. It should be noted that its is possible that the plug is not solid but open inside to define opening **67** to permit optional actuation of components of the marker **11**, such as a firing pin, bolt or the like (not shown).

FIG. **10** shows the plug **51** fully installed and seated in place in the rear open end **65** with the lever **54** rotated clockwise in the direction of the arrow shown to locate stop portion **54***a* of the lever **54** directed behind tab **69**. As a result, plug **51** is secured in place and is prevented from moving rearward out from the rear open end **65**.

Turning now to FIG. **11**, as an alternative and as another example of an accessory that can be installed in the rear open end **65**, a butt stock **53** is shown installed. Such installation still allows the simple quick access to the internals of the paintball marker without removing the whole rail kit **10**. The butt stock includes a forward portion this is received in the rear open end **65** in similar fashion to the forward portion of the plug **51**. Similarly, a tab **70** is provided on the butt stock **53** to engage with lever **54**. Once the butt stock is installed and residing the open end **65**, the lever latch **54** is rotated to lock the butt stock **53** in place, as seen in FIG. **11**. Further figures are not included herein to show the butt stock **53** unlocked because it is, essentially, the same as how the plug **51** is shown unlocked in FIGS. **7-9**.

Although the invention is shown as having a lever **54** to secure the accessories inserted into the rear of the conversion kit **10**, the conversion kit **10** could use other retention devices. For example, a user could secure a blanking plug **51** or butt stock **53** in the rear of the conversion kit **10** using cable ties, clips, ratchets, screw thread, bayonet fitting and any other structure envisioned including any of those envisioned by a person of ordinary skill in the art.

In view of the foregoing, a new and novel rail kit system and conversion kit **10** is provided that can easily convert a standard paintball marker or air soft gun **11** from a speedball non-MILSIM setup with no rail system to a scenario MILSIM type setup where a rail kit **31**A, **31**B fully enshrouds the marker or gun **11** to better simulate a real MILSIM firearm and provide a rail system **38** for receipt of accessories thereon.

The rail kit **10** of the present invention may be made out of any suitable material and manufactured in many different ways. For example, the rail kit **10** may be molded out of plastic or machined from metal, such as aluminum. Any such material and method of manufacture is considered within the scope of the present invention.

It would be appreciated by those skilled in the art that various changes and modifications can be made to the illustrated embodiments without departing from the spirit of the present invention. All such modifications and changes are intended to be covered by the appended claims.

What is claimed is:

1. A conversion kit for a projectile launching device having an outer configuration, the projectile launching device having a barrel, the projectile launching device having a projectile receiver that is connected to the barrel and that is capable of being connected to a projectile hopper, the conversion kit comprising:

at least one shell which is capable of being secured on a projectile launching device;

each shell further comprising an inner surface, and at least one first mating surface on the inner surface; each mating surface being capable of being held in tension against a corresponding second mating surface on an outer surface of a projectile launching device to increase stability of the at least one shell when mounted on a projectile launching device;

the at least one shell being configured and arranged to define a pass-through aperture to permit the projectile receiver of the projectile launching device to extend outwardly beyond the at least one shell while the at least one shell is mounted on the projectile launching device, an entry port of the projectile receiver being outside the at least one shell to enable engagement with a projectile hopper for the supply of projectiles to the projectile launching device while the at least one shell is mounted on the projectile launching device;

whereby the at least one shell changes the outer configuration of a projectile launching device onto which it is secured;

whereby the operation of the at least one shell is configured so that it does not affect the operation of the projectile launching device;

wherein the at least one shell is configured so that it does not interfere with the barrel of the projectile launching device while the at least one shell enshrouds the projectile launching device; and

wherein the barrel is removable from the projectile launching device without removing the at least one shell from the projectile launching device.

2. The conversion kit of claim **1**, wherein the at least one shell is two shells mated together.

3. The conversion kit of claim **1**, wherein the at least one shell is two or more shells being capable of being secured about a projectile launching device using fasteners that secure the two or more shells directly to each other, so the shells are capable of being held in tension against the projectile launching device.

4. The conversion kit of claim **3**, wherein the fasteners are selected from the group consisting of: threaded fasteners, cable ties, clips, and ratchets.

5. The conversion kit of claim **1**, wherein the at least one shell is capable of substantially fully enshrouding a projectile launching device.

6. The conversion kit of claim **1**, wherein the at least one shell is capable of converting a non-MILSIM type projectile launching device into a MILSIM type projectile launching device.

7. The conversion kit of claim **2**, wherein each shell has an outer surface, and the outer surfaces of the plurality of shells together form a rail system for mounting objects thereto.

8. The conversion kit of claim **1**, wherein the at least one shell defining a front end and a rear open end, further comprising:

a blanking plug configured and arranged to reside in the rear open end.

9. The conversion kit of claim **8**, further comprising:

a retention device on the at least one shell to secure the blanking plug in the rear open end.

10. The conversion kit of claim **9**, wherein the retention device is a latch connected to the at least one shell; the latch being capable of engaging with the blanking plug to prevent its removal from the rear open end.

11. The conversion kit of claim **1** wherein the at least one shell defining a rear open end, further comprising:

a butt stock capable of being inserted into the rear open end; the butt stock being configured to be releasably secured in the rear open end.

12. The conversion kit of claim **11**, further comprising:

a retention device on the at least one shell to secure the butt stock in the rear open end.

13. The conversion kit of claim **12**, wherein the retention device is a latch connected to the at least one shell; the latch being capable of engaging with the butt stock to prevent its removal from the rear open end.

14. A convertible projectile launching device having an outer configuration, comprising:

a projectile launching device, the projectile launching device having a barrel, the projectile launching device having a projectile receiver that is connected to the barrel and that is capable of being connected to a projectile hopper;

wherein the projectile launching device has an outer surface; the outer surface having at least one mating surface thereon;

at least one shell which is capable of being secured about the projectile launching device;

each shell further comprising an inner surface, and at least one first mating surface on the inner surface; each mating surface being capable of being held in tension against a corresponding second mating surface on an outer surface of a projectile launching device to increase stability of the at least one shell when mounted on a projectile launching device;

the at least one shell being configured and arranged to define a pass-through aperture to permit the projectile receiver of the projectile launching device to extend outwardly beyond the at least one shell while the at least one shell is mounted on the projectile launching device, an entry port of the projectile receiver being outside the at least one shell to enable engagement with a projectile hopper for the supply of projectiles to the projectile launching device while the at least one shell is mounted on the projectile launching device;

whereby the at least one shell changes the outer configuration of a projectile launching device on which it is secured;

whereby the operation of the at least one shell is configured so that it does not affect the operation of the projectile launching device;

wherein the at least one shell is configured so that it does not interfere with the barrel of the projectile launching device while the at least one shell enshrouds the projectile launching device; and

wherein the barrel is removable from the projectile launching device without removing the at least one shell from the projectile launching device.

15. The projectile launching device of claim **14**, wherein the at least one shell is two shells mated together.

16. The convertible projectile launching device of claim **14**, wherein the at least one shell is two or more shells being capable of being secured about the projectile launching device using fasteners that secure the two or more shells directly to each other, so the shells are capable of being held in tension against the projectile launching device.

17. The convertible projectile launching device of claim **16**, wherein the fasteners are selected from the group consisting of: threaded fasteners, cable ties, clips, and ratchets.

18. The convertible projectile launching device of claim **14**, wherein the at least one shell is capable of substantially fully enshrouding the projectile launching device.

19. The convertible projectile launching device of claim **14**,

wherein the projectile launching device is selected from the group consisting of a paintball marker and an airsoft gun; and

wherein the at least one shell is capable of converting the projectile launching device to a MILSIM type projectile launching device.

20. The convertible projectile launching device of claim **15**, wherein each shell has an outer surface, such that the outer surfaces of the plurality of shells together define a rail system for mounting objects thereto.

21. The convertible projectile launching device of claim **14**, wherein the at least one shell defining a front end and a rear open end, further comprising:

a blanking plug configured and arranged to reside in the rear open end.

22. The convertible projectile launching device of claim **21**, further comprising:

a retention device on the at least one shell to secure the blanking plug in the rear open end.

23. The convertible projectile launching device of claim **22**, wherein the retention device is a latch connected to the at least one shell; the latch being capable of engaging with the blanking plug to prevent its removal from the rear open end.

24. The convertible projectile launching device of claim **14** wherein the at least one shell defines a rear open end, further comprising:

a butt stock capable of being inserted into the rear open end; the butt stock being configured to be releasably secured in the rear open end.

25. The convertible projectile launching device of claim **24** wherein the at least one shell defines a rear open end, further comprising:

a retention device on the at least one shell to secure the butt stock in the rear open end.

26. The convertible projectile launching device of claim **25**, wherein the at least one shell defines a rear open end; and wherein the retention device is a latch connected to the at least one shell; the latch being capable of engaging with the butt stock to prevent its removal from the rear open end.

27. The conversion kit of claim **1**,

wherein each first mating surface is selected from one of: a protrusion and a seat; and each respective second mating surface is selected from the other of: a protrusion and a seat; and

wherein the at least one first mating surface on the inner surface is configured for keying and aligning the at least one shell on a projectile launching device.

28. The conversion kit of claim **1**,

wherein the conversion kit is for a projectile launching device having a gas tube receiver for receiving compressed gas from a compressed gas tank;

wherein the at least one shell is capable of enshrouding the projectile launching device while allowing access to a gas tube receiver of the underlying projectile launching device.

29. The conversion kit of claim **1**, further comprising:

an aperture defined in the at least one shell, and a removable eye cover plate received in the respective aperture, the respective removable eye cover plate and the respective aperture allowing access to a projectile detector on the projectile launching device.

30. The conversion kit of claim **1**, wherein the conversion kit is for a projectile launching device having a projectile receiver on an upper surface of the projectile launching device;

wherein the at least one shell is configured so that the projectile receiver extends upwardly beyond the at least one shell of the conversion kit while the at least one shell is mounted on the projectile launching device.

31. A conversion kit for a projectile launching device having an outer configuration, the projectile launching device having a barrel, the projectile launching device having a projectile receiver that is connected to the barrel and that is capable of being connected to a projectile hopper, the conversion kit comprising:

at least one shell which is capable of being secured on a projectile launching device;

each shell further comprising an inner surface, and at least one first mating surface on the inner surface; each mating surface being capable of being held in tension against a corresponding second mating surface on an outer surface of a projectile launching device to increase stability of the at least one shell when mounted on a projectile launching device;

an aperture defined in the at least one shell, and a removable eye cover plate received in the respective aperture, the respective removable eye cover plate and the respective aperture allowing access to a projectile detector on the projectile launching device;

the at least one shell being configured and arranged to define a pass-through aperture to permit the projectile receiver of the projectile launching device to extend outwardly beyond the at least one shell while the at least one shell is mounted on the projectile launching device, an entry port of the projectile receiver being outside the at least one shell to enable engagement with a projectile hopper for the supply of projectiles to the projectile launching device while the at least one shell is mounted on the projectile launching device;

whereby the at least one shell changes the outer configuration of a projectile launching device onto which it is secured; and

whereby the operation of the at least one shell is configured so that it does not affect the operation of the projectile launching device.

32. The conversion kit of claim **31**, wherein the at least one shell is two shells mated together.

33. The conversion kit of claim **31**, wherein the at least one shell is two or more shells being capable of being secured about a projectile launching device using fasteners that secure the two or more shells directly to each other, so the shells are capable of being held in tension against the projectile launching device.

34. The conversion kit of claim **33**, wherein the fasteners are selected from the group consisting of: threaded fasteners, cable ties, clips, and ratchets.

35. The conversion kit of claim **31**, wherein the at least one shell is capable of substantially fully enshrouding a projectile launching device.

36. The conversion kit of claim **31**, wherein the at least one shell is capable of converting a non-MILSIM type projectile launching device into a MILSIM type projectile launching device.

37. The conversion kit of claim **32**, wherein each shell has an outer surface, and the outer surfaces of the plurality of shells together form a rail system for mounting objects thereto.

38. The conversion kit of claim **31**, wherein the at least one shell defining a front end and a rear open end, further comprising:

a blanking plug configured and arranged to reside in the rear open end.

39. The conversion kit of claim **38**, further comprising:

a retention device on the at least one shell to secure the blanking plug in the rear open end.

40. The conversion kit of claim **39**, wherein the retention device is a latch connected to the at least one shell; the latch being capable of engaging with the blanking plug to prevent its removal from the rear open end.

41. The conversion kit of claim **31** wherein the at least one shell defining a rear open end, further comprising:

a butt stock capable of being inserted into the rear open end; the butt stock being configured to be releasably secured in the rear open end.

42. The conversion kit of claim **41**, further comprising:

a retention device on the at least one shell to secure the butt stock in the rear open end.

43. The conversion kit of claim **42**, wherein the retention device is a latch connected to the at least one shell; the latch being capable of engaging with the butt stock to prevent its removal from the rear open end.

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